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# Divorce Laws and Divorce Rate in the U.S.*

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**Abstract**

At the end of the 1960s, the U.S. divorce laws underwent major changes and the divorce rate more than doubled in all of the states. The new laws introduced unilateral divorce in most of the states, and changes in divorce settlements, such as property division and child custody assignments in every state. Empirical literature has focused on the switch from consensual to unilateral divorce and found that this change cannot fully account for the increase in the divorce rate. What previous literature has ignored is other aspects of the legal change, and their effect on divorce rate in states where the decision remained consensual. In this paper I show that changes in divorce settlements provide economic incentives for both spouses to agree on divorcing. I solve and calibrate a model where agents differ by gender, and wages, and make marital status, investment, and labor supply decisions. Under the new financial settlements, divorced men gain from a favorable division of property, while women gain from an increase in joint child custody assignments. Since both of them are better off in the new divorce setting, the requirement of consent for divorce is not longer necessary. Results show that changes in divorce settlements account for

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a substantial amount of the increase in the divorce rate in both the unilateral and the consensual regime. I also find that the increase in divorce rate of young couples with children contributes the most in the overall increase, and this is consistent with the data.

**JEL Classification:** J12, D13, K36

**Keywords:** Age-specific divorce rate, unilateral and consensual divorce, divorce laws, property division, alimony and child support, child custody.

# 1 Introduction

At the end of the 1960s, the U.S. divorce laws underwent major changes and the divorce rate increased from 12.0 divorces in 1960 to 25.0 divorces per thousand of married females in 1980. The reform introduced unilateral divorce law in most of the states and changes in divorce financial settlements in every state. The results of the empirical literature on the effects of the legal changes on the divorce rate are controversial, and focused on the switch from consensual to unilateral divorce. In particular, Friedberg, L. (1998) found that the switch to unilateral divorce accounts for 17% of the increase in divorce rate. Wolfers (2006) arrived at a different conclusion and found the increase in the divorce rate to be two-thirds the size of Friedberg, L. (1998)'s finding.

What previous literature ignored is the fact that the change in divorce rate occurred uniformly in all states regardless of whether the unilateral or consensual regime was adopted, and divorce financial settlements have been revised all across the U.S. The purpose of this paper is to evaluate the effect of the changes in financial settlements on the increase in the aggregate and age-specific divorce rate. The main changes in financial settlements include changes of property division rule, alimony and child support payments, child custody, and fathers' visitation rights. In particular, under the old fault-based law, the wife receives more than half of the community property. With the new no-fault law, community assets and liabilities are divided equally. Moreover, there have been changes in the amount of transfers from husbands to wives, especially when the mother has custody of the children. The rule that favorers the mother as the full custodial parent after divorce loses ground throughout the U.S. Today men and women have an equal right to custody in all states.

I provide a framework in which financial aspects of the legal change matter. In particular, I modify a standard dynamic life-cycle model of household behavior to include divorce settlements and analyze the effect of the legal changes on the couples' decisions of divorcing. In every period, married couples with and without children, decide whether or not to divorce. They cooperate when making decisions while

married, but do not cooperate as they get divorced. Divorce occurs when a new draw of match quality makes both better off single than married. One important feature of the model is that agents solve different problems depending on the life-cycle stage they are in. In particular, I divide the life-cycle into three parts: in the first part, agents make time allocation decisions about labor market, child care and leisure; in the second part, agents are childless and choose the amount of time to allocate between labor market and leisure; in the last period, all of the agents are retired. In every period they choose how much capital to accumulate. I calibrate the model to 1970 U.S. data and use it to simulate the impact of the legal reform on divorce rate of married couples of different ages.

I show that changes in divorce settlements create incentives for both spouses to agree on divorcing, neutralizing the difference between consensual and unilateral regime. Under the new regime, the gain from a favorable division of property for men offsets the loss of an increase child custody and child support payment requirements. Women gain from new child custody laws, which allow them to spend more time in the labor market, and this offsets the loss from the new reallocation rule of property. Results show that changes in divorce settlements account for a substantial amount of the increase in the divorce rate in both the unilateral and the consensual regime. I also find that the increase in divorce rate of young couples contributes the most to the overall increase, and this is consistent with the data. This last result is driven by the division of life-cycle in the three parts. In the first part, married couples benefit from both of the divorce settlements changes, as parents provide for child care, and accumulate capital. In the second and third part of their lifetime, children are not living in the parental house anymore, and the legal reform only affects the division of capital at time of divorce.

The rest of the paper is organized as follows. In the next section I document the pattern of divorced rate observed in the data, and empirical evidence of the changes in divorce settlements. Section 3 describes the model. Section 4 explains how the model is implemented and presents results.

# 2 Empirical Evidence

From the end of the 1960s to the beginning of the 1980s, the divorce rate increased from 12 divorces to 25 divorces per thousands of married females of 15 years and older[1]. Figure 1, show the increase in divorce rate and the time frame in which the legal reform took place.

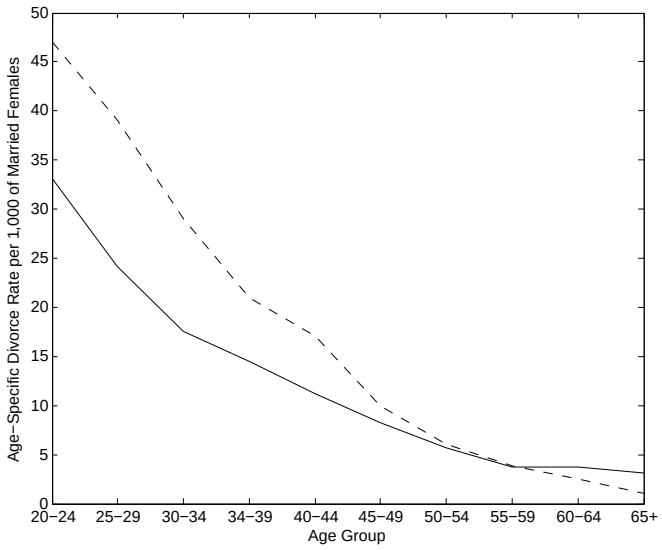
Figure 1: Divorce Rates per 1,000 of Married Females[2]


This aggregate measure does not reveal age differences in the divorce rate, and it does assume a standardized age structure of women at risk. A more precise measure is given by the age-specific divorce rate, and data are shown in Figure 2. The data show that rates increased from 1970 to 1980 with the most dramatic increase occurring in the 20 to 44 age groups. The 50 and over groups show no relevant change in this decade. In the Appendix I provide the details about the states included in the computation of the rate.

[1]The divorce rate is computed as the ratio between the total number of divorces in a particular year and the total number of married females that are 15 years and over in the same year.

[2]Source: National Center for Health Statistics.

Figure 2: Age-Specific Divorce Rates per 1,000 of Married Females[3]




The increase in the divorce rate coincides with the introduction of the Uniform Marriage and Divorce Act promulgated in 1970. It introduced revolutionary changes in family law at a federal level[4]. The Act introduced three main changes:

(i) the irretrievable breakdown as a ground for no-fault divorce and the unilateral decision to divorce;

(ii) new rules in terms of child custody and child support, and

(iii) the equitable division of property.

Prior to the no-fault divorce revolution, a divorce could be obtained only through a showing of fault of one of the parties in a marriage. California was the first state to implement the no-fault ground divorce, and nowadays all of the states have

[3]Source: Kunz and England (1988).

[4]The Uniform Marriage and Divorce Act was drafted by the National Conference of Commissioners on Uniform State Laws and by it approved and recommended for il all the states enactment in August 1970.

eliminated fault as a ground for divorce. Not all of the states have yet introduced the unilateral divorce regime: in seventeen[5] out of fifty-one states both of the parties have to express their consents to divorce.

The legal reform also introduced changes about child custody and property division aiming to a more gender neutral legislation. According to Weitzman (1985), in 1968 the wife who was usually declared as the "innocent" party, was awarded by more than half of the total property value. Data in table 1 shows that in only 12% of the cases the property was divided equally. Under the new law, the number of cases in which the property were equally divided increased substantially. By the end of the 1970s, the equal division became the norm[6].

Table 1: Division of Property in San Francisco County - Evidence from a random sample of court dockets[7]

| Fraction of Property | 1968 | 1972 |
|---|---|---|
| Majority to Husband (over 60%) | 2% | 7% |
| Approx. Equal Division (40 to 60%) | 12% | 59% |
| Majority to Wife (over 60%) | 86% | 34% |
| Mean percentage to Wife | **91**% | **62**% |

U.S. Census data show that the realized amount of transfers from husband to wife changed from 1970 to 1980. In particular, women with children in the household[8] were more likely to receive the transfers. Table **??** shows the realized value of transfers

[5]The states that have not yet adopted the unilateral law are the following: Arkansas, District of Columbia, Illinois, Louisiana, Maryland, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, and West Virginia.

[6]The average percentage of wealth inherited by the wife after divorce in sample data from the National Longitudinal Study (NLS) of the High School Class of 1972 (Fifth Follow-up, 1986) is about 58%.

[7]Source: Weitzman (1985).

[8]Note that the availability of data for that time period is restricted to cross sectional data. It is not possible to deduce whether divorced mothers are sole or joint custodian of the children present in the household at the time of the survey.

from husbands to wives in 1968 an 1980, and the percentage of receivers. The value is computed as a percentage of total average labor income of a married man of age 20 to 39.

Table 2: Alimony Transfers to Wives[9]

| | 1968 | | 1980 | |
|---|---|---|---|---|
| | Value | % Receivers | Value | % Receivers |
| 20-3 | 0.15 | 8 | 0.14 | 11 |
| 40-59 | 0.29 | 9 | 0.28 | 10 |
| 60+ | 0.20 | 12 | 0.14 | 6 |

Table **??** shows the amount of alimony and child support as a percentage of a young married man by number of children[10].

Table 3: Alimony and Child Support Transfers to Mothers[11]

| | 1968 | | 1980 | |
|---|---|---|---|---|
| Children | Value | % Receivers | Value | % Receivers |
| 1 | 0.13 | 24 | 0.10 | 45 |
| 2 | 0.26 | 35 | 0.21 | 44 |
| 3 | 0.20 | 29 | 0.19 | 35 |
| 4+ | 0.28 | 25 | 0.13 | 28 |

Even thought changes in divorce law aimed to increase the gender (or parent) neutrality of child custody assignments, the observed percentage of sole custodian fathers did not substantially increase. Table **??** shows the percentage of cases in

[9]Source: IPUMS 1968 and 1980.

[10]In 1968, 17.17% of married couples of age 20 to 40 has no children; 17.98% has one child; 26.75% has two children; 18.48% has three children, and 19.61% has four or more children. There is no relevant change in the distribution of number of children from 1968 to 1980.

[11]Source: IPUMS 1968 and 1980.

which mothers and fathers obtained sole or joint custody for divorces occurred after 1968. See Appendix for details on the sample considered.

Table 4: Custody and Visitation Rights in 1986[12]

| | |
|---|---|
| Mothers are sole custodians | 90.2% |
| Fathers are sole custodians | 3.2% |
| Joint custody | 6.6% |

[12]Source: NLS of the High School Class of 1972 (Fifth Follow-up).

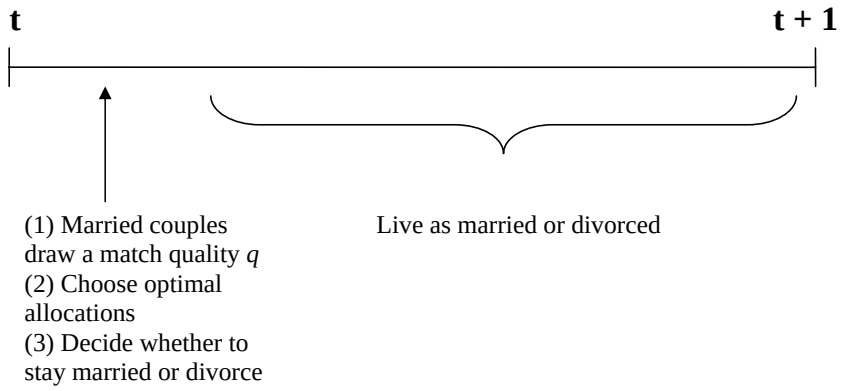
# 3 The Model

In this section I develop a model of divorce decision in order to assess the quantitative contribution of the legal changes to the increase in age-specific (and aggregate) divorce rate in the U.S.

## 3.1 Environment

The economy is populated by four types of agents that differ by gender and marital status. Time is discrete, finite, and indexed by $t = 0, 1, .., T$. Agents are alive for $T$ periods and are ex-ante heterogenous. Specifically, married couples are indexed by a match quality $q \in \mathbb{R}$ that follows an idiosyncratic stochastic process. In every period married couples receive a shock on their match quality, choose their optimal allocations and decide whether to remain married or to divorce. Divorce requires consensual agreement. The timing of the model is shown in the following figure.

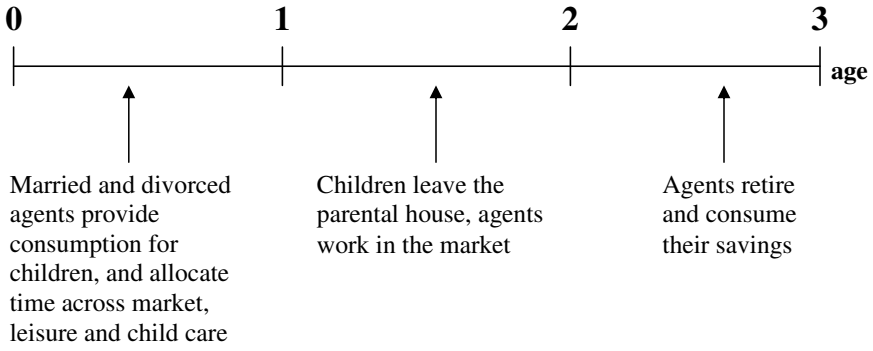
Figure 3: Time Line




There is not remarriage, and divorce is an absorbing state. Husband and wife cooperate when making decisions, but each agent behaves non cooperatively while divorced. That is, a divorced agent chooses its optimal allocations taking as given

the optimal choices of the divorced partner. There is uncertainty in the quality of the match, and in the possibility of receiving alimony and child support transfers. Credit market are perfect and $r$ denotes the net rate interest. To analyze the effect of the change in divorce law on agents at different stages of their life time, I divide the life cycle in three parts, as shown in Figure 4.

Figure 4: Life-cycle of Married Couples




Agents live for sixty years. They are born as married at age 20, and die for sure at the age of 80. Initial matching is exogenous. From age 20 to age 39 (i.e. in the first stage of their life cycle), married and divorced agents provide consumption for their children, and allocate time between market, leisure, and child care. From age 40 to age 59, all of the households are childless. Agents continue to work in the market. Finally, in the last part of their life cycle, agents retire and consume their savings. For the remaining of the chapter, the subscripts $f$ and $m$ denotes female and male. In the following section, I describe the maximization problem that married and divorced agents solve at the different stages of their life cycle.

## 3.2 Married Couples

During the first part of their life cycle, agents allocate their time between market, child care, and leisure. I abstract from fertility decision and assume the number of

children to be exogenous. The dynamic program of married couples of age 20 to 39 is the following:

$$\begin{aligned} V_{M,1}(b_1, q_1) &= \max_{\left\{c_1^i, c_1^k, l_1^i, t_1^i, h_1^i, b_2^i\right\}} \sum_{i=f,m} \gamma_i \left\{ \log c_1^i + \log c_1^k + \alpha_l \log l_1^i + \alpha_{lk}^i \log\left(t_1^f + t_1^m\right) \right\} \\ &\quad + q_1 + \sum_{t=2,3} \beta^{t-1} E \left\{ \sum_{i=f,m} \gamma_i V_1^i \left(b_t^i, q_t\right) | q_{t-1} \right\} \\ s.t. \quad & c_1^f + c_1^m + c_1^k \leq w_1^f h_1^f + w_1^m h_1^m + (1+r) b_1 - b_2 \\ & l_1^i + h_1^i + t_1^i = 1 \ \forall i = f, m \\ & b_1 \geq 0 \text{ given} \end{aligned}$$

Each agent $i = f, m$ in the couple chooses consumption $c_1^i$, leisure $l_1^i$, total child care time $t_1^i$, market time $h_1^i$, and savings $b_2$, to maximize the Pareto weighted sum of spouses' utility[13]. Note that children's consumption and total[14] child care time $(t_1^f + t_1^m)$ are both public goods. Note that, while the utility weight on child's consumption is the same for both parents, I allow them to have different utility weights on the time spent with children. The wage rate is denoted by $w_1^i$ for an agent $i = f, m$ in period 1. Moreover, the value of being married depends on the random variable $q$ that the couple draws at the beginning of every period. $q_t$ is defined as follows:

$$q_t = q_0 + \epsilon_t$$

where $\epsilon_t$ follows a first-order autoregression:

$$\epsilon_t = (1-\rho)\mu + \rho\epsilon_{t-1} + \varphi_t \text{ with } \varphi_t \sim N(0, \sigma_\epsilon^2) \text{ and } \epsilon_1 = 0$$

[13] $gamma_i$ is the Pareto weight on agent's $i$ utility.

[14] More precisely, $t_1^i$ is equal to time spent with one child times the number of children in the household.

If there are no children in the household, the couple solves the following problem:

$$\begin{aligned} V_{M,1}\left(b_1, q_1\right) &= \max_{\left\{c_1^i, l_1^i, h_1^i, b_2^i\right\}} \sum_{i=f,m} \gamma_i \left\{\log c_1^i + \alpha_l \log l_1^i\right\} \\ &\quad + \sum_{t=2,3} \beta^{t-1} E\left\{\sum_{i=f,m} \gamma_i V_t^i\left(b_t^i, q_t\right) | q_{t-1}\right\} + q_1 \\ s.t. &\quad c_1^f + c_1^m \leq w_1^f h_1^f + w_1^m h_1^m + (1+r) b_1 - b_2 \\ &\quad l_1^i + h_1^i = 1 \ \forall i = f, m \\ &\quad b_1 \geq 0 \text{ given} \end{aligned}$$

In both cases the continuation value is defined as follows:

$$V_t^i\left(b_t^i, q_t\right) = \begin{cases} V_{M,t}^i\left(b_t, q_t\right) & \text{if } \textbf{ONE} \text{ of the spouses wants to remain married} \\ V_t^{D,i}\left(x b_t\right) & \text{if } \textbf{BOTH} \text{ of the spouses agree to divorce} \end{cases}$$

where $x \in [0,1]$ is fraction of property inherited from marriage, and:

$$V_{M,\tau}^i\left(b_\tau^i, q_\tau\right) = \log c_\tau^i + \log c_\tau^k + \alpha_l \log l_\tau^i + \alpha_{tk}^i \log\left(t_\tau^f + t_\tau^m\right) + \sum_{t>\tau} \beta^{t-1} E\left\{V_t^i\left(b_t, q_t\right) | q_{t-1}\right\} \quad (1)$$

$$V_{D,\tau}^i\left(x b_\tau^i\right) = \log c_\tau^i + \log c_\tau^k + \alpha_l \log l_\tau^i + \alpha_{tk}^i \log\left(t_\tau^f + t_\tau^m\right) + \sum_{t>\tau} \beta^{t-1} E\left\{V_{D,t}^i\left(b_t\right)\right\} \quad (2)$$

where (1) is the value to agent $i$ of being married with children in the household[15]. (2) is the value of being divorced and having full custody of the children. In the case in which either the couple had no children before divorcing or spouse $i$ did not get joint or full custody, the value does not include utility from neither child's consumption nor child care time. See the next section for a more detailed description of the dynamic problem solved by divorced agents.

[15] If no children are in the household, the value does not include utility from child's consumption and child care time.

In the second part of their life cycle, married couples allocate their time between market, and leisure. At this stage children are not in the household, and parents do not receive any utility form spending time with them. The dynamic program of married couples of age 40 to 59 is the following:

$$\begin{aligned} V_{M,2}\left(b_2, q_2\right) &= \max_{\left\{c_2^i, l_2^i, h_2^i, b_3^i\right\}} \sum_{i=f,m} \gamma_i \left\{\log c_2^i + \alpha_l \log l_2^i\right\} + q_2 \\ &\quad + \sum_{t=3} \beta^{t-1} E\left\{ \sum_{i=f,m} \gamma_i V_t^i\left(b_t^i, q_t\right) | q_{t-1} \right\} \\ s.t. &\quad c_2^f + c_2^m \leq w_2^f h_2^f + w_2^m h_2^m + \left(1+r\right) b_2 - b_3 \\ &\quad l_2^i + h_2^i = 1 \ \forall i = f, m \end{aligned}$$

where the continuation value is defined as above. In the third part of their life cycle, agents retire and consume their savings. The dynamic program of married couples of age 60 to 79 is the following:

$$\begin{aligned} V_{M,3}\left(b_3, q_3\right) &= \max_{\left\{c_3^i, l_3^i, b_3^i\right\}} \sum_{i=f,m} \gamma_i \left\{\log c_3^i + \alpha_l \log l_3^i\right\} + q_3 \\ s.t. &\quad c_3^f + c_3^m \leq \left(1+r\right) b_3 \end{aligned}$$

## 3.3 Divorced Agents

In this section, I will describe the dynamic problem solved by divorced agents in each part of their life-cycle. I will first go through the problem solved by women. The one solved by men will be symmetric. A divorced woman of age 20-39, with full or joint custody of the children, solves the following maximization problem:

$$
\begin{aligned}
V^f_{D,1}\left(xb_1\right) \;=\; & \max_{\left\{c^f_1, l^f_1, t^f_1, h^f_1, b^f_2\right\}} \log c^f_1 + \log c^k_1 + \alpha_l \log l^f_1 + \alpha^f_{tk} \log\left(t^f_1 + \hat{t}^m_1\right) \\
& + \sum_{t=2,3} \beta^{t-1} E\left\{V^f_{D,t}\left(b^f_t\right)\right\} \\
s.t. \qquad & c^f_1 + c^k_1 \leq w^f_1 h^f_1 + (1+r)\, xb^f_1 - b^f_2 + al_1 \\
& c^k_1 + c^f_1 \geq al_1 \\
& t^f_1 \geq \underline{t}^f_1 \\
& t^f_1 + l^f_1 + h^f_1 = 1
\end{aligned}
$$

where $xb_1$ is fraction of assets inherited from the marriage and $x \in [0,1]$ is the property division rule set by the law. They choose consumption, leisure, and child care time in a non-cooperative fashion. Moreover, they receive alimony and child support transfers $al_1$ from the ex-husband. I assume that the total amount of household's consumption should not be lower than the alimony and child support transfer[16]. The amount of time to spend in child care has a strictly positive lower bound. This is to capture the time constraint related to the custody. In summary, mothers who have full or joint custody, provide consumption for their children, and are supposed to spend at least some time $\underline{t}^f_1$[17] in child care. They take as given the child care time choice of the father[18]. If the mother does not have custody or there are no children in the household at time of divorce, she will not receive any utility from chid's consumption, child care time. She may receive a transfer $al_1$ which will only reflect the alimony payment.

The problem solved by divorced women of age 40-59 differs from the one above in the child custody aspect. As no children are in middle age households, divorced

[16] A consequence of this assumption is that these transfers cannot be allocated to savings.

[17] In case of joint custody $\underline{t}^f_1 = 0$.

[18] For computational simplicity, I assume that child's consumption is a private good at time of divorce.

agents do not receive any utility from neither child's consumption nor child care time. The dynamic program solved by a divorced woman is the following:

$$\begin{aligned} V_{D,2}^{f}\left(b_2\right) &= \max_{\left\{c_2^f, l_2^f, h_2^f, b_3^f\right\}} \log c_2^f + \alpha_l \log l_2^f \\ &\quad + \sum_{t=3} \beta^{t-1} E\left\{V_{D,t}^{f}\left(b_t^f\right)\right\} \\ s.t. \qquad & c_2^f \leq w_2^f h_1^f + \left(1+r\right) b_2^f - b_3^f + al_2 \\ & c_2^f \geq al_2 \\ & l_2^f + h_2^f = 1 \end{aligned}$$

In the third and last part of their life, the problem is the following:

$$\begin{aligned} V_{D,3}^{f}\left(b_3\right) &= \max_{\left\{c_3^f, l_3^f, h_3^f\right\}} \log c_3^f + \alpha_l \log l_3^f \\ s.t. \qquad & c_3^f \leq \left(1+r\right) b_3^f + al_3 \\ & c_3^f \geq al_3 \end{aligned}$$

## 3.4 Equilibrium

Given wage rates $\left\{w_t^f, w_t^m\right\}_{t=0,\ldots,T}$, risk-free return from assets $r$ and initial assets $b_1 = 0$, an equilibrium for this economy is: a set of decision rules of married agents for consumption $\left\{\hat{c}_t^f(b_t, q_t), \hat{c}_t^m(b_t, q_t)\right\}_{t=0,..,T}$, leisure $\left\{\hat{l}_t^f(b_t, q_t), \hat{l}_t^m(b_t, q_t)\right\}_{t=0,..,T}$, hours worked in the market $\left\{\hat{h}_t^f(b_t, q_t), \hat{h}_t^m(b_t, q_t)\right\}_{t=0,1,..,T}$, child-care time $\left\{\hat{t}_t^f(b_t, q_t), \hat{t}_t^m(b_t, q_t)\right\}_{t=0,..,T}$, investment in risk-free assets $\left\{\hat{b}_{t+1}(b_t, q_t)\right\}_{t=0,..,T}$; a set of decision rules of divorced

agent $i = f, m$, with $j \neq i$, for consumption $\left\{\hat{c}_t^i(b_t^i, \hat{t}_t^j)\right\}_{t=0,..,T}$, leisure $\left\{\hat{l}_t^i(b_t^i, \hat{t}_t^j)\right\}_{t=0,..,T}$, hours worked in the market $\left\{\hat{h}_t^i(b_t^i, \hat{t}_t^j)\right\}_{t=0,..,T}$, child-care time $\left\{\hat{t}_t^i(b_t^i, \hat{t}_t^j)\right\}_{t=0,..,T}$, investment in risk-free assets $\left\{\hat{b}_{t+1}^i(b_t^i, \hat{t}_t^j)\right\}_{t=0,..,T}$ such that agents maximize, $\hat{b}_{T+1}(b_T, q_T) = 0$ and $\hat{b}_{T+1}^i(b_T^i, \hat{t}_T^j) = 0 \ \forall i, j = f, m$.

# 4 Quantitative Analysis

This section proceeds as follows. In Section 4.1 I discuss the calibration which consists of two stages. First, some parameters are assigned numerical values from the data. Second, the remaining parameters are calibrated to match the age-specific divorce rate, average time spent in the market and with children by married agents in the U.S. in 1970 (or 1968 when available). The quantitative importance of the mechanism built into the model can be assessed by its ability to generate an increase in divorce rate as displayed in Figure (2). In Section 4.2, I use the changes in property division, child custody, child support and alimony transfers, to assess their quantitative contribution in explaining the rise in age-specific divorce rate (and hence aggregate divorce rate). In Section 4.3 I propose a series of experiments to decompose the role of each legal change. Moreover, I decompose the increase in divorce rate to analyze which group of agents contributed to its increase the most. The decomposition is based on presence and number of children, and on initial wealth. In Section 4.4 I study the implications of the legal changes in time allocation choices. Finally, in Section 4.5, I test the effect of a change to unilateral decision to divorce.

## 4.1 Calibration

The first stage of the calibration strategy is to assign values to some parameters using some a-priori information. The model period is twenty years, and agents are born married at age 20. The length of the model life is $T = 3$, the interest rate is $r = 0.04$, and the subjective discount factor is $\beta = (1/(1+r))^{20}$. Initial distribution of assets matches the distribution of assets of married agents of age 20-39 in 1962

in the U.S. According to Bossons (1973), 93% of these households owned assets for a value lower than $\$15,000$[19]; 4.7% had assets for a value between 15 and $\$30,000$; 1.7% owned assets valued between 30 and $\$60,000$; the remaining 0.6% had assets valued more than $\$60,000$. Table (5) shows the list of other parameters that do matter quantitatively and are assigned values from the data[20].

Table 5: Exogenous Parameters

| | Parameters | 20-39 | 40-59 |
|---|---|---|---|
| $\gamma_i$ | Pareto weight | 0.5 | |
| $w_t^m$ | men's wage rates | 3.03 | 3.41 |
| $w_t^f$ | women's wage rates | 1.54 | 1.57 |
| | | 2.18 | 2.22 |
| $\underline{t}_1^i$ | minimum child care time | 0.15 | |
| $al_t$ | alimony and child support | | |
| $x$ | property division | 90% | |

The average wage rate of a married man of age 20-39 is such that his total labor earnings are equal to 1. I assume that all married women work in the market. Data from IPUMS 1968 shows that 12.34% of married women in the labor force are full time workers. I set the average wage rate to be 2.18, to match the observed gender wage gap of 72%. For the remaining group of part-time workers, the average wage rate is 1.54 to match a wage ratio of 51%. The lower bound on the time to spend with children is computed using data from the American Survey of Time Use of 1965. The minimum time spent in child care by divorced women of age 20-39 is 15% of the total time endowment. Alimony and child support transfers are computed using IPUMS Current Population Survey data from 1968[21] as a percentage of total labor earnings of young married men. The property division rule is set according to Weitzman (1985), and $x = 91\%$ implies that, at time of divorce, wives receive 91%

[19] 1962 U.S. dollars.

[20] See Appendix for a description of the sample data.

[21] Only data on realized transfers are available. It is not possible to infer from the available variables whether a divorced woman/man was/was not supposed to receive the transfer.

of the assets accumulated throughout marriage. The distribution of married couples with and without children matches the data for the U.S. in 1968. Also, in case of divorce, mothers are the only custodians of the children.

The remaining parameters are those that characterized the stochastic process of the match quality, i.e.:

- average $\mu$
- variance $\sigma_\epsilon^2$
- persistence $\rho$

and the weights on the utility function, i.e.:

- men leisure $\alpha_l^m$
- women leisure $\alpha_l^f$
- child care time for fathers $\alpha_{tk}^m$
- child care time for mothers $\alpha_{tk}^f$

I build a measure of the distance between statistics in the model and the corresponding statistics in the U.S. data. The procedure targets the following statistics:

(i) divorce rates for the following age groups:

  · 20 to 39;

  · 40 to 59;

  · 60 to 79;

(ii) average fraction of time worked by young (20-39) married men;

(ii) average fraction of time worked by young (20-39) married women;

(iv) average fraction of time spent by young fathers in child care;

(v) average fraction of time spent by young mothers in child care;

I then choose each of the parameters simultaneously to minimize this function. Table 6 and 7 indicate the value of the calibrated parameters.

Table 6: Calibrated Parameters - Part 1

| Parameter | | Moment Matched in the Data | |
|---|---|---|---|
| $\alpha_l^m$ | 1.6 | Time Worked, married men 20-39 | 0.33 |
| $\alpha_l^f$ | 2.0 | Time Worked, married women 20-39 | 0.06 |
| $\alpha_{tk}^m$ | 0.3 | Child Care Time, married men 20-39 | 0.06 |
| $\alpha_{tk}^f$ | 1.4 | Child Care Time, married women 20-39 | 0.29 |

Table 7: Calibrated Parameters - Part 2

| | Benchmark | Data |
|---|---|---|
| Divorce rate age 20-39 | 22.0 | 22.3 |
| Divorce rate age 40-59 | 7.0 | 7.2 |
| Divorce rate age 60+ | 0 | 3.4 |
| $\mu$ | 64 | |
| $\sigma_\epsilon^2$ | 15.12 | |
| $\rho$ | 0.99 | |

The model is able to match the calibration targets in terms of moments summarized in the tables above, but the divorce rate for the eldest age group. The main reasons of reason of this is that the income level of divorced men of age 60+ is always too low to get them to agree on divorcing and facing the possibility of paying alimony to the wives.

## 4.2 Baseline Experiment

The main quantitative implications of the model are with respect to the change in the divorce rates from 1970 to 1980. In this baseline experiment I *simultaneously* make the following changes:

(i) property division $x$ decreases from 90% to 57% to wives;

(ii) distribution of custody changes from 100% of the cases to mothers to 90.2% to mothers; 3.2% to fathers; and, 6.6% to both (joint custody);

(iii) lower bound on time spent in child care by divorced mothers decreases from 0.15 to 0.10, is now 0.04 for divorced fathers who are the only custodians.

(iv) the tables below illustrate the changes in alimony, child support transfers, and probability of receiving the transfers.

Table 8 shows that the expected value of receiving the transfers increases for all of the age groups but elderly.

Table 8: Alimony Transfers to Wives

| | 1968 | | 1980 | |
|---|---|---|---|---|
| | Value | % Receivers | Value | % Receivers |
| 20-39 | 0.15 | 8 | 0.14 | 11 |
| 40-59 | 0.29 | 9 | 0.28 | 10 |
| 60+ | 0.20 | 12 | 0.14 | 6 |

Table 9 shows the percentage of receivers and the amount received by number of children in the household. Once again, these numbers are inferred from IPUMS Current Population Survey of 1968, and refers to realized payments, with no connection to the judge decision at the time of the decree.

Table 9: Alimony and Child Support Transfers to Young Wives by Number of Children

| | 1968 | | 1980 | |
|---|---|---|---|---|
| Children | Value | % Receivers | Value | % Receivers |
| 1 | 0.13 | 24 | 0.10 | 45 |
| 2 | 0.26 | 35 | 0.21 | 44 |
| 3 | 0.20 | 29 | 0.19 | 35 |
| 4+ | 0.28 | 25 | 0.13 | 28 |

All of these changes in the parameters of the models are made to assess the impact of the legal changes that occurred from the end of the Sixties to the beginning of the Seventies.

The results are summarized in the following Table 10.

Table 10: The Impact of Divorce Settlement Changes on Age-specific Divorce Rate

| Age group | | Before (1970) | After (1980) | Change |
|---|---|---|---|---|
| 20-39 | Data | 22.35 | 34.0 | 11.65 |
| | Model | 22.0 | 28.0 | 6.0 |
| 40-59 | Data | 7.20 | 9.22 | 2.02 |
| | Model | 7.0 | 7.8 | 0.8 |
| 60+ | Data | 3.4 | 1.8 | -1.6 |
| | Model | 0 | 1.0 | 1.0 |

The model explains about 51% of the increase in divorce rate of the young couples, about 40% of the increase in divorce rate of middle age couples, and predicts an increase in the divorce rate of elderly couples that is not observed in the data. In the model, the more favorable division of property rule for husbands gives them the possibility of ending up in the last period of the life cycle with a higher amount of savings, making them willing to divorce.

## 4.3 Decomposing the Forces

Who does contribute the most (or the least) to the increase of the divorce rate? In this section, I show how the model performs in terms of divorce rate by number of children, and by educational level (or initial wealth) of young married couples.

Note that, for my best knowledge, the divorce rate by number of children or by education level are not available. In the following i approximate the divorce rate by categories using stock values available from the Current Population Survey.

Table **??** shows that the model does not a good job in matching the divorce rates of couples with and without children in 1968. As in the data, the increase in divorce rate is higher for couples without children than for those with children.

Table 11: Divorce Rate by Number of Children[22]

| | | Before (1968) | After (1980) | Change |
|---|---|---|---|---|
| With Children | Data | 0.08 | 0.17 | 0.09 |
| | Model | 0.03 | 0.04 | 0.01 |
| Without Children | Data | 0.19 | 0.40 | 0.21 |
| | Model | 0.03 | 0.06 | 0.03 |

The model performs better in matching the divorce rate of married couples that are among the 10% of the population with high initial wealth (see Bossons (1973)). It is not the case for the case of married couples with of low level initial wealth.

[22]As the yearly number of divorces of couples with and without children is not available in the data, I approximate this measure with the ratio of the number of divorced females with/without children and the number of married females with/without children of age 39. The source is IPUMS Current Population Survey, 1968 and 1980.

Table 12: Divorce Rate by Education Level[23]

| | | Before (1968) | After (1980) | Change |
|---|---|---|---|---|
| With College Degree | Data | 0.07 | 0.16 | 0.09 |
| | Model | 0.05 | 0.07 | 0.02 |
| Without College Degree | Data | 0.11 | 0.19 | 0.08 |
| | Model | 0.03 | 0.04 | 0.01 |

## 4.4 Implications on Time Allocations

The exercise predicts some changes in terms of the time allocation choices. These changes mostly regard young divorced women for whom the comparative statics exercise predicts an 18% increase in time allocated to the market activity, and a 26% decrease in time spent with children. Moreover, middle age women increase increase the time spent in the market by 13%. Time spent in child care decreases for both by about 24%. Time in the market does not change for married women, but it decreases for young married men by 24%.

[23]As the yearly number of divorces of couples by value of assets owned is not available, I approximate this measure with the ratio of the number of divorced females with/without college degree and the number of married females with/without college degree of age 39, 59. The source is IPUMS Current Population Survey, 1968 and 1980. There are no observations available for divorced of age 79.

Table 13: Market Time Allocation[24]

| | | Before (1965) | After (1975) |
|---|---|---|---|
| Married Women 20-39 | Data | 0.06 | 0.06 |
| | Model | 0.06 | 0.07 |
| Divorced Women 20-39 | Data | 0.18 | 0.20 |
| | Model | 0.07 | 0.11 |
| Married Men 20-39 | Data | 0.33 | 0.21 |
| | Model | 0.33 | 0.15 |
| Divorced Men 20-39 | Data | 0.15 | 0.22 |
| | Model | 0.36 | 0.32 |

Table 14: Child Care Time Allocation[25]

| | | Before (1965) | After (1975) |
|---|---|---|---|
| Married Women 20-39 | Data | 0.29 | 0.20 |
| | Model | 0.29 | 0.28 |
| Divorced Women 20-39 | Data | 0.07 | 0.14 |
| | Model | 0.19 | 0.14 |
| Married Men 20-39 | Data | 0.06 | 0.07 |
| | Model | 0.06 | 0.06 |
| Divorced Men 20-39 | Data | | 0.03 |
| | Model | | 0.01 |

[24]The Source is the Survey of Time Use for 1965 and 1985.
[25]The Source is the Survey of Time Use for 1965 and 1985.

## 4.5 Unilateral Divorce

In this section, I show the results of two experiments[26] in which I change the decision to divorce from consensual to unilateral. First, I consider the benchmark framework (pre-legal changes), and change the divorce constraint in the continuation value as follows:

$$V_t^i\left(b_t^i, q_t\right) = \begin{cases} V_{M,t}^i\left(b_t, q_t\right) & \text{if } \textbf{BOTH} \text{ of the spouses wants to remain married} \\ V_t^{D,i}\left(xb_t\right) & \text{if } \textbf{ONE} \text{ of the spouses agree to divorce} \end{cases}$$

The results are in Table **??**. The change to unilateral divorce predicts an increase in the divorce rate of young couples that is smaller than the one obtained in Section 4.2, showing that for this age group a change to the unilateral decision is not sufficient to generate the increase in divorce rate seen in the data. Similarly, the divorce rate increases for the middle age group but less than in the benchmark experiment of Section 4.2. The eldest age group experiences a relevant increase in the divorce rate, that is not observed in the data.

Table 15: Age-specific Divorce Rate - Unilateral Divorce

| Age group | | Before (1970) | After (1980) | Change |
|---|---|---|---|---|
| 20-39 | Benchmark | 22.0 | 28.0 | 6.0 |
| | Unilateral | 22.0 | 25.0 | 3.0 |
| 40-59 | Benchmark | 7.0 | 7.8 | 0.8 |
| | Unilateral | 7.0 | 7.5 | 0.5 |
| 60+ | Benchmark | 0 | 1.0 | 1.0 |
| | Unilateral | 0 | 33.0 | 33.0 |

Second, I add the unilateral decision to all of the other legal changes considered

[26]The results of the experiments are not exactly comparable to data. In the data, we observe a change in divorce settlements that took place in all of the states, while only some of the 51 states adopted the unilateral decision to divorce.

in Section 4.2. The results are in Table **??**. We can see that the change in divorce rate is higher than that predicted by the only change in financial settlements. In particular, the combination of the two changes results in an increase in divorce rate of the young married couples that is even higher than that observed in the data. As in the experiment above, the unilateral decision generates an increase in divorce rate of elderly couples.

Table 16: Age-specific Divorce Rate - Unilateral Divorce and Other Legal Changes

| Age group | | Before (1970) | After (1980) | Change |
|---|---|---|---|---|
| 20-39 | Benchmark | 22.0 | 28.0 | 6.0 |
| | Unilateral | 22.0 | 42.1 | 20.1 |
| 40-59 | Benchmark | 7.0 | 7.5 | 0.5 |
| | Unilateral | 7.0 | 8.3 | 1.3 |
| 60+ | Benchmark | 0 | 1.0 | 1.0 |
| | Unilateral | 0 | 35.0 | 35.0 |

# 5 Conclusions

At the end of 1960s, divorce law underwent major changes. This paper assesses the quantitative impact of changes in divorce settlements on the divorce rate. Unlike the existing empirical literature, I do not consider the change to unilateral divorce, and show that changes in the divorce settlements contribute to a substantial increase in divorce rate. In particular, together changes in child custody assignments, alimony transfers and division of property account for 50% of the increase in divorce rate of couples in the age group 20-39, and for 40% of the increase in divorce rate of couples of age 40 to 59. Moreover, the relative changes in age-specific divorce rate predicted by the model are consistent with the data.

# 6 Appendix

## 6.1 Numerical solution and Algorithm

I solve the model by backward induction. Consider any arbitrary period. Each couple enters the period with a stock of assets, and a certain match quality. They draw a new match quality, and choose allocations for the case they remain married, and the case they get divorced. For each agent, I evaluate the level of utility associated with the two marital status. The level of utility conditional on marital status is computed by checking all of the possible alternatives for consumption, labor supply, time to spend with children, and saving. For each possible choice, I select the one that yields the highest level of utility. If at least one of the spouses prefers to stay married, then they remain married; if both of them prefers to divorce, they will divorce[27].

The presence of a discrete choice (decision to divorce) and several continuous decision variables like labor supply, time spent with children and saving implies that the value function of the married agents is not necessarily concave or differentiable. To solve the problem I discretize the continuous choice variables. The grid for time allocation decisions includes thirty equally spaced points in the interval $[0, 1]$. Wealth is described by a thirty point uniform grid in the interval $[0, 8]$.

The solution of the model is characterized by policy functions. For every state of the world, the policy functions returns the optimal choices for marital status, consumption, allocation of time between the market and the children, and saving. The policy functions are used to simulate the shock histories for 10,000 married couples. Using the simulated histories and the optimal decision rules, I compute the target moments for the model economy. I proceed by minimizing the sum of the square difference between the target and the simulated moments. The procedure is called Downhill Simplex, and does not require the calculation of derivatives.

[27]This is the case of consensual divorce. In case of unilateral divorce, the will of one party is sufficient to start the process of the decree.

## 6.2 Data

Alimony and child support payments[28] are from the Current Population Survey of the U.S. of 1968 (see Miriam King and Sobek (2004)). The sample includes divorced and separated females with children present in the household, of age 20 to 39, that are in the labor force, and who received the transfers.

Data on custody are from the National Longitudinal Survey High School Class 1972 (Fifth Follow-up). The sample includes all mothers who have been married and divorced at least once. All of them are in the age group 30 to 40. In questions 67 and 68 of the survey (variable FI167 and FI168), respondents are asked to provide information about child custody and visitation agreement.

The percentage of properties allocated to wife after divorce is also computed using data from the National Longitudinal Survey High School Class 1972 (Fifth Follow-up). More precisely, I analyze the answers given in question 62A (var. FI62A) and question 62B (var. FI162B). For each respondent, those variables provide the (intervalled) amount of properties received by themselves and by the spouse.

Table 18 reports the age-specific divorce rates for the states for which the data were available in both 1970 and 1980.

[28] All of the figures are deflated using the Consumer Price Index (1982-1984=100).

Table 17: Age-specific Divorce Rates[29]

| State | Year | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65+ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HA | 1970 | 28.6 | 24.8 | 19.5 | 16.5 | 12.8 | 10.2 | 7.5 | 3.8 | 3.3 | 2.2 |
| | 1980 | 45.5 | 40.2 | 30.1 | 23.2 | 16.2 | 11.0 | 5.2 | 4.0 | 2.9 | 1.2 |
| IL | 1970 | 34.5 | 25.6 | 19.2 | 15.3 | 11.7 | 8.2 | 5.6 | 3.5 | 2.1 | 1.1 |
| | 1980 | 50.5 | 37.6 | 27.7 | 22.0 | 16.1 | 9.9 | 6.9 | 3.5 | 2.3 | 1.2 |
| KA | 1970 | 42.5 | 30.5 | 20.1 | 16.5 | 11.8 | 8.9 | 6.2 | 3.7 | 2.3 | 1.4 |
| | 1980 | 54.6 | 42.1 | 32.6 | 25.9 | 18.8 | 11.4 | 6.3 | 3.9 | 2.5 | 1.7 |
| MD | 1970 | 19.8 | 18.1 | 13.2 | 10.9 | 8.4 | 6.3 | 4.7 | 2.6 | 2.1 | 0.9 |
| | 1980 | 36.4 | 35.2 | 26.0 | 19.7 | 15.0 | 9.9 | 6.4 | 3.7 | 2.5 | 1.1 |
| MT | 1970 | 52.3 | 32.4 | 22.3 | 19.6 | 16.1 | 9.9 | 5.9 | 5.0 | 4.7 | 1.5 |
| | 1980 | 58.0 | 43.5 | 35.4 | 29.4 | 23.4 | 16.3 | 9.6 | 11.8 | 0.9 | 0.0 |
| NE | 1970 | 30.5 | 18.3 | 13.5 | 10.2 | 8.8 | 6.5 | 3.5 | 1.9 | 1.3 | 0.8 |
| | 1980 | 40.1 | 31.3 | 24.2 | 20.1 | 15.8 | 9.3 | 5.3 | 3.6 | 1.9 | 1.0 |
| OR | 1970 | 46.7 | 31.6 | 25.3 | 21.4 | 16.5 | 10.2 | 7.6 | 5.4 | 3.2 | 1.6 |
| | 1980 | 63.4 | 50.1 | 38.9 | 33.9 | 24.6 | 15.4 | 9.6 | 6.9 | 4.1 | 2.7 |
| RI | 1970 | 19.3 | 16.5 | 11.6 | 9.9 | 7.1 | 5.1 | 2.6 | 2.3 | 1.4 | 0.6 |
| | 1980 | 39.2 | 32.8 | 26.7 | 22.3 | 15.3 | 9.7 | 5.3 | 3.6 | 2.2 | 0.6 |
| SC | 1970 | 20.2 | 16.5 | 12.5 | 9.8 | 7.4 | 5.5 | 3.6 | 1.8 | 1.8 | 0.1 |
| | 1980 | 39.9 | 33.1 | 24.7 | 20.2 | 13.6 | 9.7 | 6.4 | 3.9 | 2.6 | 1.3 |

[29]Source: Kunz and England (1988)

Table 18: Age-specific Divorce Rates - Cont.d

| State | Year | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65+ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TN | 1970 | 42.2 | 29.5 | 21.1 | 17.1 | 12.6 | 9.9 | 7.4 | 4.0 | 3.2 | 1.6 |
| | 1980 | 66.0 | 48.8 | 35.5 | 27.8 | 19.9 | 12.8 | 8.4 | 5.2 | 3.9 | 3.6 |
| TX | 1970 | 43.5 | 30.8 | 22.0 | 19.4 | 14.7 | 11.6 | 7.9 | 5.3 | 3.8 | 2.2 |
| | 1980 | 61.1 | 48.6 | 36.7 | 29.8 | 21.8 | 14.5 | 9.4 | 6.3 | 4.1 | 2.5 |
| UT | 1970 | 32.8 | 27.1 | 17.8 | 15.8 | 10.5 | 8.2 | 6.8 | 3.8 | 1.9 | 1.3 |
| | 1980 | 40.7 | 34.0 | 27.7 | 8.6 | 17.2 | 11.8 | 6.7 | 4.3 | 2.7 | 2.5 |
| VT | 1970 | 24.6 | 19.6 | 15.7 | 11.6 | 8.3 | 8.1 | 3.7 | 2.8 | 1.4 | 0.7 |
| | 1980 | 45.0 | 42.7 | 35.1 | 29.7 | 20.3 | 14.4 | 6.5 | 4.3 | 2.8 | 1.4 |
| VA | 1970 | 22.1 | 18.4 | 14.1 | 10.9 | 8.9 | 6.5 | 5.0 | 3.1 | 2.2 | 1.2 |
| | 1980 | 36.5 | 35.4 | 26.5 | 20.6 | 15.8 | 10.7 | 6.9 | 4.2 | 2.6 | 1.3 |
| WV | 1970 | 28.1 | 27.1 | 16.8 | 13.8 | 12.1 | 9.8 | 8.5 | 5.9 | 5.5 | 2.8 |
| | 1980 | 47.1 | 32.7 | 25.8 | 20.3 | 14.2 | 10.1 | 5.8 | 3.7 | 4.9 | 0.0 |
| Total | 1970 | 33.1 | 24.2 | 17.6 | 14.5 | 11.2 | 8.2 | 5.7 | 3.7 | 3.7 | 3.1 |
| | 1980 | 47.0 | 39.0 | 29.0 | 21.0 | 17.0 | 10.0 | 6.0 | 3.9 | 2.5 | 1.1 |

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